“Exploring the Implementation of Unplugged Coding for Developing Computational Thinking in Early Childhood: A Case Study in Playdate”

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Introduction

- The importance of Computational Thinking (CT) in early childhood for future skills
- Coding Without Wires: Teaching CT through physical activity, without digital tools
- Educational Context: Technology limitations in early childhood education (ECE) in Indonesia highlight the accessibility of coding without the use of technology
- Research Objective : Exploring how cordless coding develops CT at the Playdate Zona Kreativa

Literature Review

- Computational Thinking (CT): Core skills include problem solving, pattern recognition, algorithms, decomposition (Lee, at al 2023)
- Benefits of Cordless Coding: Development of easily accessible CT skills in a low-tech environment
- CT in Early Childhood : Enhances creativity, problem solving, logical reasoning from a young age (Papadakis, 2022)

Methods

- Research design: qualitative, case study
- Source: Educator at Playdate Zona Kreativa, Bandung
- Data collection technique: Interview, observation, documentation
- Data analysis technique: Thematic analysis

Educator's Perception

- Belief in the unplugged coding approach: Seen as an activity that stimulates children's thinking, creativity, cooperation, and communication, without having to use a computer.

Implementation of unplugged coding

- Curriculum Design : Fun, child-centered learning, aligned with scientific approach
- Integrated Learning: Coding is taught through guided play and science-based activities

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Activity Example

Shape Sorting: Teaching pattern recognition

Floating Egg Experiment : Introduces algorithmic thinking

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Conclusion

Overall, the results of this study show that science-based unplugged coding has great potential to be applied in early childhood education, especially in ECE that have limited access to digital technology. It not only helps children develop computational thinking skills, but also promotes creativity, independence and collaboration skills. With increased support in terms of resources and teacher training, this method can become an important part of the ECE curriculum to prepare children for the challenges of the digital age.

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